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Setting Apparatus for a Transit Circle. By W. E. Cooke, M.A.

(Communicated by the Secretaries.)

I beg to offer the following suggestions for an apparatus to facilitate setting a transit circle in Z D. I cannot attempt to enter into details, for so much depends upon the shape of the instrument and the class of work for which settings are required. But the general idea will be readily grasped by the aid of figures 1 and 2, where 1 represents the apparatus viewed from north or south, 2 from east or west. C is a light flanged or grooved circle attached to the axis, parallel to and about the same size as the graduated circle. Attached to the rim is a non-extensible cord, the end hanging vertically and carrying a pointer P. The diagram shows P as a framework, across the middle of which a horizontal thread is stretched, capable of a small vertical adjustment by means of a rackwork.

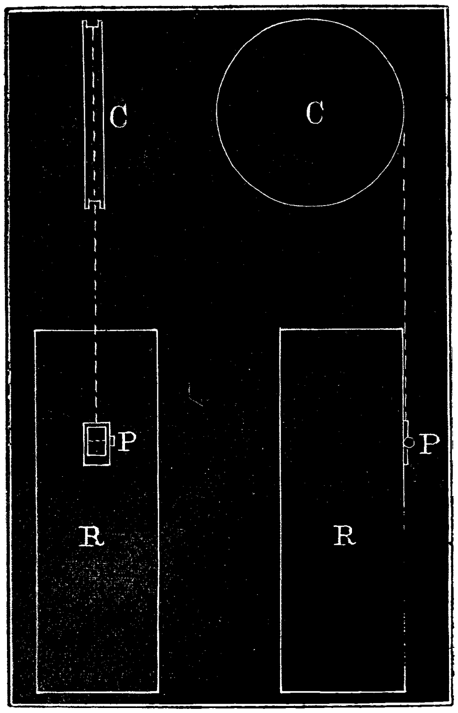

Fig. 1. Fig. 2.

As the telescope is revolved, P will move up or down, and its vertical height above any arbitrary fixed point will give an indication of the declination of the star towards which the telescope is directed.

R is a vertical cylinder which rotates by clockwork once in twenty-four sidereal hours, and can be readily adjusted on its

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revolving spindle if necessary. Upon its surface a sheet of paper is stretched, on which lines are drawn to represent R.A. and Dec. The R.A. lines are obtained by dividing the circumference of the cylinder into 24 hours &c., and the distance separating the successive lines of declination is obtained from the vertical moment of P. After drawing these lines, all clock stars and all those stars included in the current working list can be plotted and the cylinder mounted. It is adjusted in the first place so that the sidereal time at the instant of mounting corresponds to the same moment of R.A. on the cylinder opposite the centre of P. The apparatus is now ready for use, the only attention required being the occasional winding up of the clockwork.

The rotation of R will bring each star in succession opposite the middle of P (or rather opposite a vertical line through this point) at the moment the real object crosses the meridian, and by moving the telescope until the cross hair of P cuts the picture of the star, we shall bring the object itself into the field of view.

The observer therefore will not require either a sidereal clock or a star list for setting purposes. Standing in front of the telescope he sees by a glance at the cylinder what stars are approaching the meridian, and he sets for any particular one by simply revolving the instrument until the cross hair of P bisects the picture of the selected object.

Adelaide Observatory :
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The Radiant Point of the October Meteors (Orionids).

By W. F. Denning.

So many meteor-showers are now known or suspected, and the great proportion of them are of such feeble and uncertain character, that it seems scarcely desirable to multiply them by further observation. Instead of searching for new and feeble systems, the meteor observer would perhaps be better engaged in directing attention to the rich periodical streams, and investigating their peculiarities with more closeness than has been done hitherto.

It is certain that the features of moving and stationary radiants cannot be well examined in regard to the very feeble showers, but that we must select prominent displays, and such as are pretty durable, like the *Perseids* and *Orionids.* Streams of this character are sufficiently rich and prolonged to be traced very satisfactorily on many successive nights, whereas the minor systems are so tenuous, and apparently so intermittent, that the observer finds it extremely difficult to gather sufficient

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